

SEQUENCE LISTING

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 Buckholz, Thomas
 Salhanick, Arthur

<120> PITUITARY ADENYLATE CYCLASE ACTIVATING PEPTIDE (PACAP) RECEPTOR
 (VPAC2) AGONISTS AND THEIR PHARMACOLOGICAL METHODS OF USE

<130> 5189

<150> US 60/539,550
 <151> 2004-01-27

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 <151> 2004-04-29

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<170> PatentIn version 3.3

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His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Gln Lys Thr
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His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Gln Lys Val
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His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Gln Lys Trp
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His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Gln Lys Tyr
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<400> 70

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Gly Lys Lys Tyr Leu Gln Ser Ile Lys Gln Arg Ile
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His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln
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Met Ala Lys Lys Lys Tyr Leu Gln Ser Ile Lys Gln Arg Ile
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His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Ser Lys Lys Tyr Leu Gln Ser Ile Lys Gln Arg Ile
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<400> 73

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Pro Gln Arg Ile
 20 25 30

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<400> 74

His Ser Asp Ala Val Phe Thr Asp Asn Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Ser Lys Lys Tyr Leu Gln Ser Ile Arg Gln Arg Ile
 20 25 30

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<400> 75

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Val Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Asn Lys Arg Tyr
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<400> 76

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Asn Lys Arg Tyr
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<400> 77

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Val Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Asn Lys
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His Thr Glu Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Val Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Asn Lys Arg Tyr
 20 25 30

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His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
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Leu Ala Val Lys Lys Tyr Leu Gln Asp Ile Lys Asn Gly Gly Thr
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Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Asn Lys Arg
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His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Leu Ala Ala Lys Lys Tyr Leu Gln Thr Ile Lys Asn Lys Arg Tyr
 20 25 30

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His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Thr Ile Lys Asn Lys Arg Tyr
20 25 30

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<400> 83

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
1 5 10 15

Met Ala Ala His Lys Tyr Leu Gln Ser Ile Lys Asn Lys Arg Tyr
20 25 30

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His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
1 5 10 15

Met Ala Ala Lys His Tyr Leu Gln Ser Ile Lys Asn Lys Arg Tyr
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<400> 85

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
1 5 10 15

Met Ala Gly Lys Lys Tyr Leu Gln Ser Ile Lys Asn Lys Arg
20 25 30

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<400> 86

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
1 5 10 15

Met Ala Lys Lys Lys Tyr Leu Gln Ser Ile Lys Asn Lys Arg
20 25 30

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His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
1 5 10 15

Met Ala Arg Lys Lys Tyr Leu Gln Ser Ile Lys Asn Lys Arg
20 25 30

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His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
1 5 10 15

Met Ala Ser Lys Lys Tyr Leu Gln Ser Ile Lys Asn Lys Arg
20 25 30

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His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Pro Asn Lys Arg
20 25 30

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His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Gln Asn Lys Arg
20 25 30

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His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Arg Asn Lys Arg
20 25 30

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<400> 92

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Asn Arg Arg
 20 25 30

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His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
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Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Asn Lys Ala
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His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
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Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Asn Lys Phe
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His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
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Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Asn Lys His
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His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Asn Lys Ile
 20 25 30

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Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Asn Lys Lys
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His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Asn Lys Leu
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<400> 99

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Asn Lys Met
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 1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Asn Lys Pro
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His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Asn Lys Gln
 20 25 30

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<400> 102

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Asn Lys Ser
 20 25 30

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<400> 103

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Asn Lys Thr
 20 25 30

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<400> 104

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Asn Lys Val
 20 25 30

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<400> 105

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Asn Lys Trp
20 25 30

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His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Asn Lys Tyr
20 25 30

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<400> 107

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
1 5 10 15

Met Ala Gly Lys Lys Tyr Leu Gln Ser Ile Lys Asn Arg Ile
20 25 30

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His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
1 5 10 15

Met Ala Lys Lys Lys Tyr Leu Gln Ser Ile Lys Asn Arg Ile
20 25 30

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<400> 109

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
1 5 10 15

Met Ala Ser Lys Lys Tyr Leu Gln Ser Ile Lys Asn Arg Ile
20 25 30

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<400> 110

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Pro Asn Arg Ile
20 25 30

<210> 111
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<400> 111

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Ser Lys Lys Tyr Leu Gln Ser Ile Arg Asn Arg Ile
 20 25 30

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<400> 112

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Val Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Gln Lys Arg Tyr Cys
 20 25 30

<210> 113
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<400> 113

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Gln Lys Arg Tyr Cys
 20 25 30

<210> 114
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<220>
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<400> 114

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Val Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Gln Lys Cys
 20 25 30

<210> 115
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<400> 115

His Thr Glu Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Val Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Gln Lys Arg Tyr Cys
 20 25 30

<210> 116
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<400> 116

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Leu Ala Val Lys Lys Tyr Leu Gln Asp Ile Lys Gln Gly Gly Thr Cys
 20 25 30

<210> 117
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<220>
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<400> 117

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Lys Gln Lys Arg Cys
20 25 30

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<400> 118

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
1 5 10 15

Leu Ala Ala Lys Lys Tyr Leu Gln Thr Ile Lys Gln Lys Arg Tyr Cys
20 25 30

<210> 119
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<400> 119

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Thr Ile Lys Gln Lys Arg Tyr Cys
 20 25 30

<210> 120
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<400> 120

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Ala His Lys Tyr Leu Gln Ser Ile Lys Gln Lys Arg Tyr Cys
 20 25 30

<210> 121
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<400> 121

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Ala Lys His Tyr Leu Gln Ser Ile Lys Gln Lys Arg Tyr Cys
 20 25 30

<210> 122
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<400> 122

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Gly Lys Lys Tyr Leu Gln Ser Ile Lys Gln Lys Arg Cys
 20 25 30

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 <223> ACETYLATION

<400> 123

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Lys Lys Lys Tyr Leu Gln Ser Ile Lys Gln Lys Arg Cys
 20 25 30

<210> 124
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<400> 124

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
 1 5 10 15

Met Ala Arg Lys Lys Tyr Leu Gln Ser Ile Lys Gln Lys Arg Cys
 20 25 30

<210> 125
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<400> 125

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
1 5 10 15

Met Ala Ser Lys Lys Tyr Leu Gln Ser Ile Lys Gln Lys Arg Cys
20 25 30

<210> 126
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<400> 126

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Pro Gln Lys Arg Cys
20 25 30

<210> 127
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<400> 127

His Ser Asp Ala Val Phe Thr Asp Gln Tyr Thr Arg Leu Arg Lys Gln
1 5 10 15

Met Ala Ala Lys Lys Tyr Leu Gln Ser Ile Gln Gln Lys Arg Cys
20 25 30

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